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CSC 155 -Read me A4

User Inputs: Similar to A3

W	Camera Forward
S	Camera Back
A	Camera Move Left
D	Camera Move Right
Q	Camera move up
E	Camera Move Down
Arrow Keys - Camera Rotation	Up,Down,Left,Right
O	Axes Off/On
L	Lights Off/On, freezes lights
Mouse Movement	Box/Point that displays light
Scroll Wheel Up	Box/Point moves closer to user +Z
Scroll Wheel Down	Box/Point moves away from user -Z
A4 new input- I	remove/display instance boxes

A3 old Stuff- scroll down for a4 additions

1) I imported the Model Class given from a chapter program, and implemented the shuttle obj file given for one of the objects. I also drew out two torus and a cube with the vertices written out.
2) For textures I used the shuttle texture from the ModelsTextures called ‘spstob_1.jpg’, which I was able to overlay on the shuttle. For one of the torus I was able to overlay with the ice texture also from the ModelsTextures under ‘Luna/ice.jpg’. For the last two objects I had them use material bronze and gold from the material class. The torus got mixed in with the vertices when bringing in the texture files.
3) The shadows reflect off of the shuttle and also also implemented on the other objects. The shuttles shadow displays on the background torus and if moved around reflects on the side torus as well.
4) There is a ambient light also on at the point in the program but the positional light is moved by the mouse/box implemented. The positional light isn’t always turned off but gets frozen in place and not able to move if off.

5) The viewing is similar to that of a2 in which it uses the input mouse keys and now the mouse as well. Input keys up above. Have to click in the program first to make inputs work.
6) Screenshot image attached in the root folder.

A4 added stuff from A3

1) I added 4 of the 7 choices, Tessellation shader, Instancing, Environment Mapping, and 3D texture.
2) For the Tessellation shader, i used the height map with the “squareMoonMap”. The moon has height with it and its files are in the “tess” folder. This file was given in the extra files from the course.
3) For instancing I used one of the given programs and applied it to the background, can be turned off and on with the keyboard input “I”.
4) Environment Mapping I used a skycube with the image given from nasa. The object is a torus blended in with the sky, it is right under the shuttle and right torus. Source used: “https://nasa3d.arc.nasa.gov/detail/tycho8”. I broke the image up into multiple pieces and created a skycube, it then added the reflection to the torus. Split up into stars folder
5) 3D texture you have to give it a few seconds to show up or look for it. It is floating around the environment torus, it appears on the screen after a few seconds with the checker yellow/blue pattern.

Extra notes:

A) Takes 6 seconds or so for the 3D texture to appear, it is floating by and goes counter clockwise.
B) Instancing follows camera, can be changed in code by just changing the number
C) Theres a bump folder for procedural bump but not attached.
D) Theres a lot of files, but they are all split for rendering new programs.
E) It is hard to see the torus environment mapped, but in the screenshot you can see it better, it is constantly rotating.
F) Objs are implemented with depth so some stuff is sent to the way back.